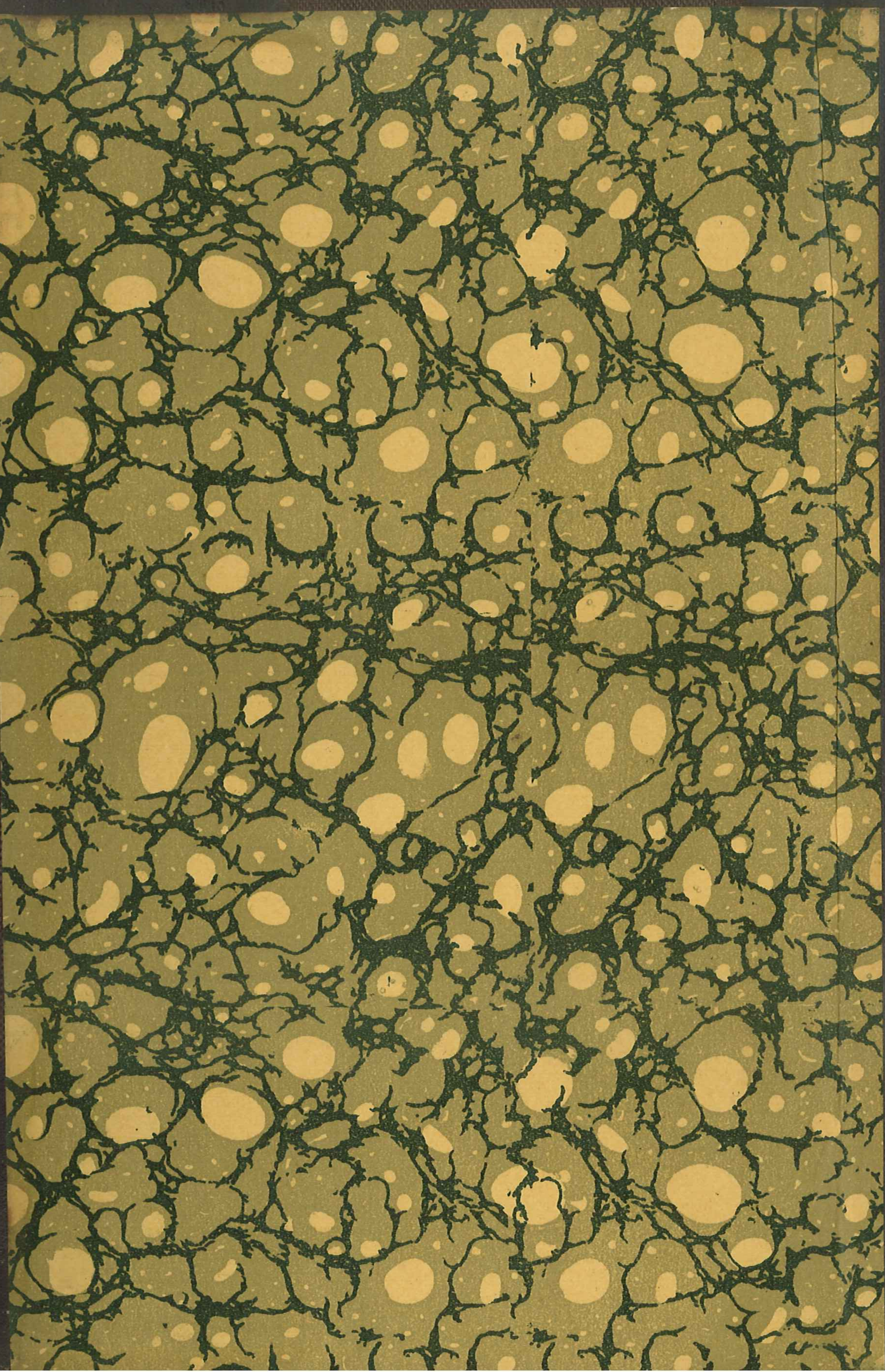


THE PATENTED WROUGHT IRON

AIR-TIGHT FURNACE,

FOR BURNING

Anthracite and Bituminous Coal,

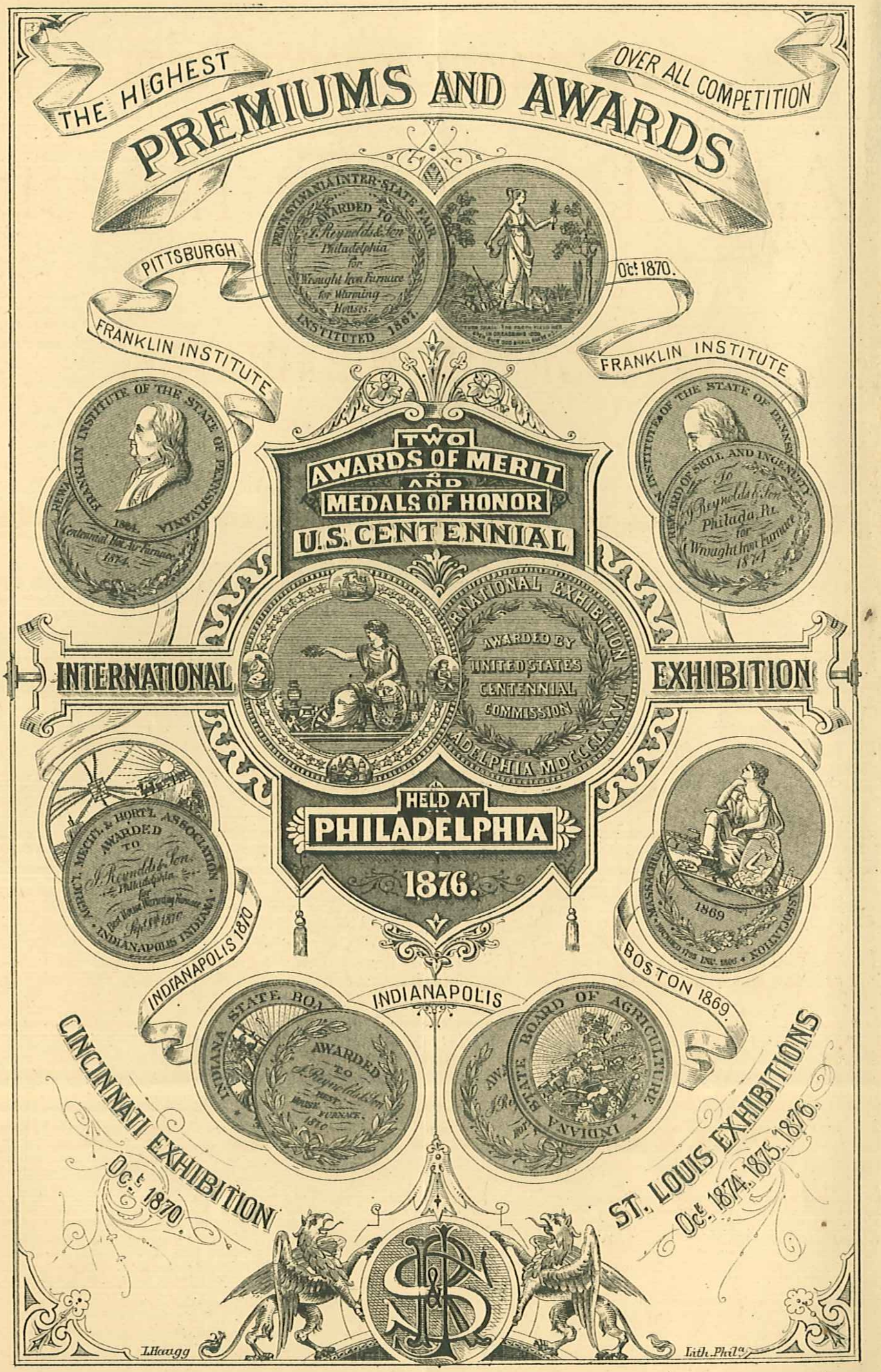
COKE OR WOOD,

MANUFACTURED BY

J. REYNOLDS & SON,

N. W. Cor. Thirteenth and Filbert Streets,

PHILADELPHIA, PA.


THE HIGHEST
PREMIUMS AND AWARDS
OVER ALL COMPETITION
PITTSBURGH
PENNSYLVANIA INTER-STATE FAIR
AWARDED TO
J. Reynolds & Son
Philadelphia
for
Wrought Iron Furnace
for Warming
Houses.
INSTITUTED 1867.
Octr 1870.
FRANKLIN INSTITUTE
FRANKLIN INSTITUTE OF THE STATE OF PENNSYLVANIA
1824.
Centennial Hot Air Furnace
1874.
FRANKLIN INSTITUTE
INSTITUTE OF THE STATE OF PENNS
REWARD OF SKILL AND INGENUITY
To
J. Reynolds & Son
Philada, Pa.
for
Wrought Iron Furnace
1874
TWO
AWARDS OF MERIT
AND
MEDALS OF HONOR
U.S. CENTENNIAL
INTERNATIONAL
EXHIBITION
INTERNATIONAL EXHIBITION
AWARDED BY
UNITED STATES
CENTENNIAL
COMMISSION
PHILADELPHIA MDCCCLXXVI
HELD AT
PHILADELPHIA
1876.
AGRICL. MECHL. & HORTL. ASSOCIATION
AWARDED
TO
J. Reynolds & Son
Philadelphia
for
Best House Warming Furnace
Sept 1870
INDIANAPOLIS INDIANA
INDIANAPOLIS 1870
MASSACHUSETTS
1869
BOSTON 1869.
INDIANAPOLIS
INDIANA STATE BOARD
AWARDED
TO
J. Reynolds & Son
BEST
HOUSE
FURNACE
1870
STATE BOARD OF AGRICULTURE
INDIANA
CINCINNATI EXHIBITION
Oct. 1870.
ST. LOUIS EXHIBITIONS
Oct. 1874. 1875. 1876.
J. Haugg
Lith. Phila.

THE PATENTED WROUGHT IRON

AIR-TIGHT FURNACE,

WITH PERMANENT

WROUGHT IRON RADIATOR,

AND

Shaking and Clinker Grinding Grate,

FOR BURNING

Anthracite and Bituminous Coal,

COKE OR WOOD,

MANUFACTURED BY

J. REYNOLDS & SON,

N. W. Cor. Thirteenth and Filbert Streets,

PHILADELPHIA, PA.

THE PATENTED

WROUGHT IRON AIR-TIGHT FURNACE,

WITH PERMANENT WROUGHT IRON RADIATOR

AND SHAKING AND CLINKER GRINDING GRATE,

FOR

BURNING ANTHRACITE AND BITUMINOUS COAL, COKE OR WOOD,

MANUFACTURED BY

J. REYNOLDS & SON,

N. W. CORNER OF THIRTEENTH AND FILBERT STREETS,

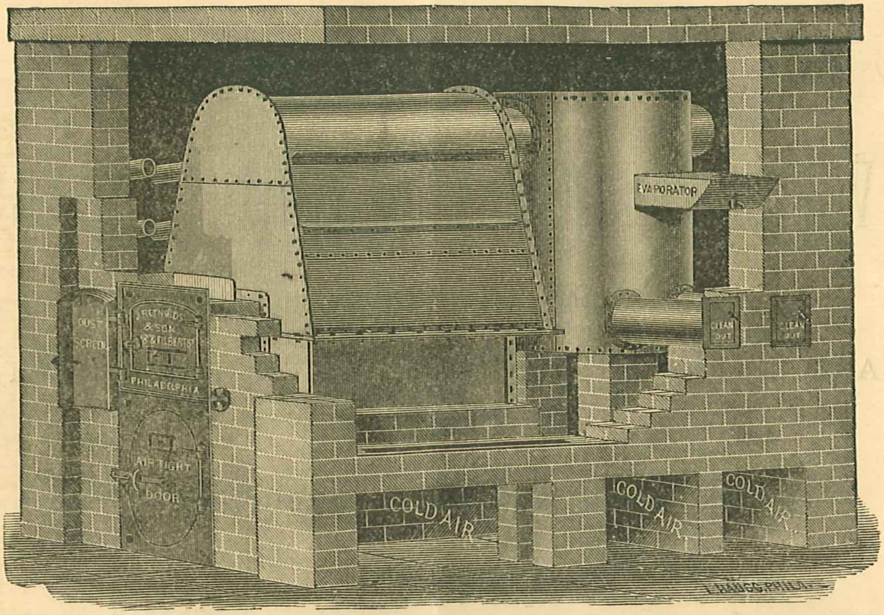
PHILADELPHIA, PA.

Special and careful attention is invited to our PATENTED WROUGHT IRON AIR-TIGHT FURNACE with PERMANENT WROUGHT IRON RADIATOR.

It is not manufactured and sold as a cheap or inferior article, but the very *best and most approved*, and to supply the increasing demand for a *first-class*, *healthy*, *economical*, *efficient*, *simple*, *safe and reliable* HOUSE WARMING APPARATUS.

It has been thoroughly tested with all the various kinds of fuel common to our country, in every description of buildings, and has given universal and unequalled satisfaction; it is made with extreme care, of the very best selected materials, by skilled workmen, under our personal supervision, and no expense is spared to make it first-class and durable in every respect. It is so far superior to all other WARM AIR FURNACES in its construction, and all the requisites of a perfect HEATING APPARATUS, that no comparison, whatever, can be justly made between them.

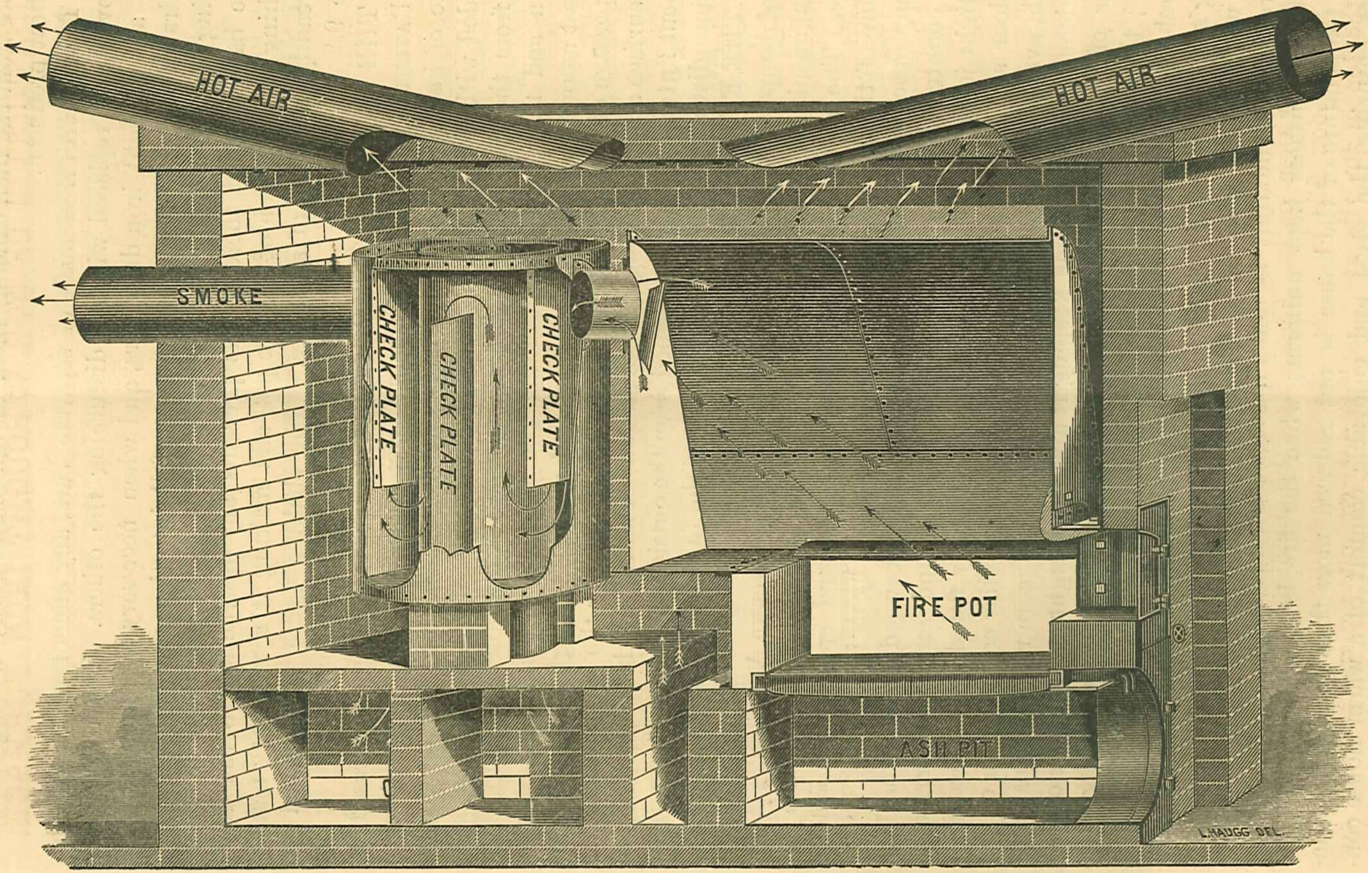
CONSTRUCTION OF OUR WROUGHT IRON FURNACE.



The illustrations give a general idea of the appearance and construction of our Furnace. It is made of the very best quality of Wrought Iron Plates (those nearest the fire being ¼ inch thick) riveted together as tightly as those of a *steam boiler*, so that it is practically of one piece; dispensing entirely with all sand, cement, or putty joints, the only safe and sure method of preventing the escape of gas, dust and smoke into the Air Chamber. *Wrought iron* being an elastic material will bend before breaking, and riveted together in this manner, will expand and contract in the mass without disturbing the seams. The main body, or top of the Furnace, is strongly bolted down upon wrought iron side plates which enclose the tile or lining of Fire Pot, and extend down into the brickwork of the Ash Pit; or, if preferred, upon a Wrought Iron Bottom or Ash Pit.

THE FIRE POT is oblong square and shallow; it is formed by four heavy, well burned clay tile or linings, four inches thick, one for each side and end. Owing to its shape it can be easily kept clean and free from clinkers or any obstruction, by simply passing the poker against the sides and removing them daily. This cannot be done with any round Fire Pot, which soon fills up with clinkers and requires constant relining. On the top of the tile are placed perforated hollow plates, forming air chambers from which air, previously heated in its passage around the Fire Pot, is discharged in jets over the fire, commingling with the gases and

SECTIONAL CUT SHOWING INTERNAL CONSTRUCTION OF FURNACE.



smoke from the fuel, causing them to ignite and burn; adding much to the heat produced.

THE GRATE is made of separate bars, any one of which can be removed and replaced without disturbing the others. The two centre ones are wrought iron draw bars, and when necessary to dump the fire are drawn out, allowing the contents to fall into the ash pit; the rests or bearing bars are placed under the front and back tile, and the ends of the grate bars inserted therein, this prevents any obstruction to the draft reaching every portion of the fire pot, and making it a very easy matter to readily clean it of all ashes. (The shaking grate is described on page 9.)

THE RADIATING SURFACE of our furnace is largely increased by our PATENTED PERMANENT WROUGHT IRON OVAL RADIATOR, which is also made of heavy wrought iron Plates well riveted together, and internally divided with four partitions, so that the products of combustion, in passing from the furnace through it, have to pass first down, then up, then down and then up before reaching the smoke flue, impinging on the largest amount of surface; it has an oval opening through the centre, for the passage of cold air through it, thereby increasing the available radiating surface and generating a large amount of additional heat. It is a permanent fixture, and can be cleaned from the outside of furnace at any time without disturbing the fire or any part of the furnace.

THE FURNACE IS REGULATED easily and perfectly without the use of dampers or valves, by the BRASS SLIDE in the ROUND AIR-TIGHT DRAFT DOOR, opening it to increase the draft and heat, and closing it to reduce the same. The air-tight draft door is an essential and specially important feature of the furnace, and as designed and made by us is not to be found on any other except as a poor imitation. The beveled edge on the door and counterpart of the frame are turned and ground, making a perfectly air-tight joint; the brass slide is planed and nicely fitted, the beveled edge on door and frame, in conjunction with the peculiar construction of the latch, avoids the breaking of the frame by the more rapid expansion of the door, at the same time keeping it always air-tight. The upper or feed door of the furnace is always kept closed, except when supplying with fuel; thus no currents of cold air are allowed to pass in over the fire, thereby cooling and very sensibly reducing the temperature of the radiating surfaces, as is the case with all furnaces that require the opening of the upper or feed door to regulate or check draft and fire. By our plan of regulating, the draft is under perfect control, and the temperature of radiating surfaces kept uniform; when the fire is fixed for the night, the temperature of the house is not reduced more than three or four degrees, ensuring the great and enjoyable comfort of a warm house continuously. During the late Spring and early Fall months, when little heat is required only in the morning and evening, a small fire can be made and so regulated as to allow those apartments most distant from the furnace to be moderately warm, without any more oppression in those in close proximity; or, *wood* can be burned at these times without any change in the furnace.

The greatest amount of heat and economy can only be obtained by the exercise of care in the management of the furnace, and strictly complying with the few simple directions for its control. The fire need not be let out once during a whole Winter season. By its peculiar construction it does not get red hot in any part, but generates a soft, genial, Summer-like heat, in no way the least injurious.

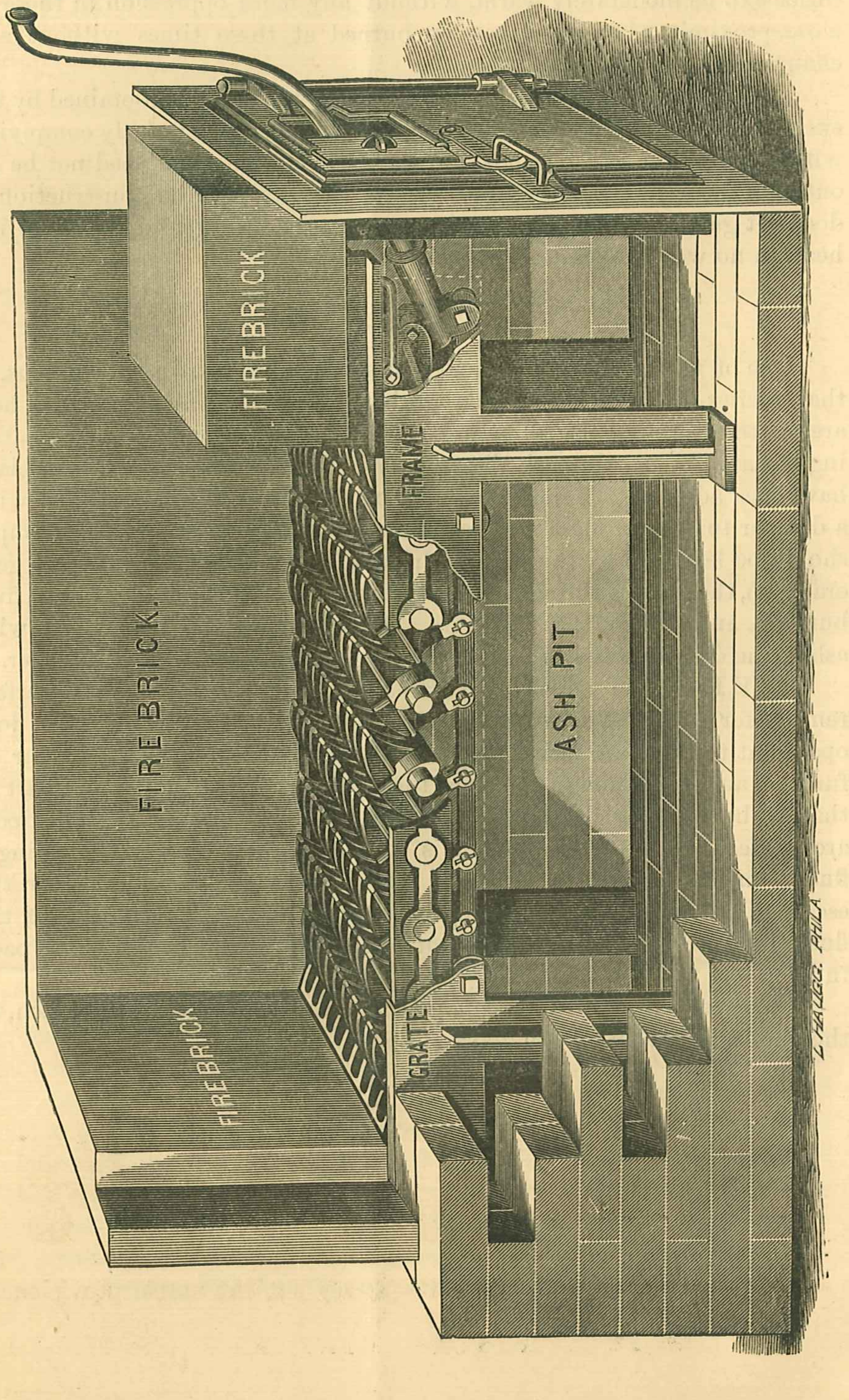
DUST.

One of the greatest annoyances in all kind of Heating Apparatus, is that arising from the Dust when raking. The ashes being dry and hot, are scattered around the cellar and drawn into the cold air openings, entering the apartments through the registers. To overcome this, various plans have been adopted, the most common being the ordinary dust flue, with a damper to open or close it as required. If after done raking this damper should be left open by the forgetfulness of the servant (and it most generally is), the draft is through the fire downwards out through the dust flue, burning and destroying the grate. This dust flue becomes filled with ashes, the damper rusts off, requiring frequent expense to keep in order.

THE PATENT DUST SCREEN attached to our furnace is a perfect remedy for all these defects and difficulties. It is simply a box door opened at the bottom, placed on the left hand side of the feed door of furnace, and long enough to cover the opening of the upper and part of that of the lower or draft door. When the fire wants raking, the doors are opened, and the Dust Screen is shut over their openings, forming a flue from the ash pit up over the fire through the upper door for the escape of the dust which is invariably drawn into it by the draft of the flue; the doors of the furnace cannot be shut, until this screen is put back in its proper position.

Furnaces having the shaking grate do not need the Dust Screen, as they are raked with all the doors closed.

PATENTED
SHAKING AND CLINKER GRINDING GRATE.

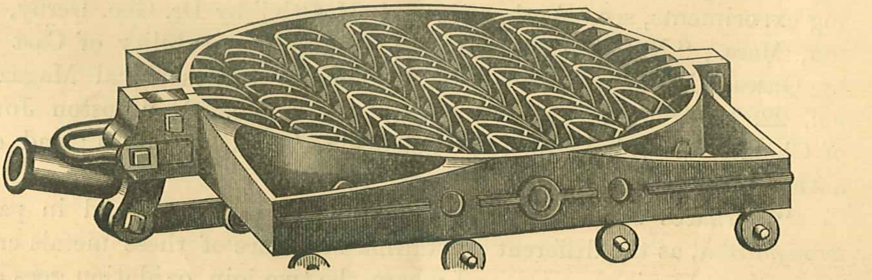


PATENTED
SHAKING AND CLINKER GRINDING GRATE.

This is the best, most effectual and simple device yet invented for satisfactorily and entirely removing all ashes, clinkers and other obstructions from the fire pot with the least possible trouble and in the quickest time.

It consists of a frame made in two parts, joined together at the front and back by bolts having brass nuts. In the frame are placed a number of rocking or vibrating shafts, having their bearings in the sides of the frame. On these shafts are cast a series of pointed, curved shaped teeth or cutters, having ribbed sides, the teeth of one shaft interlock or project into those of the adjoining one. From the middle of each shaft depends an arm, these arms are connected by a bar, the outer end of which is connected to one arm of a lever pivoted at the front of the grate frame, having a socket for the reception of the operating lever or handle. When the lever is vibrated the rocking bars are moved simultaneously, the teeth of one bar rise and those of the adjoining bar descend passing each other, as the clinkers and other obstructions are caught between the points of the cutters they are disintegrated, and fall into the ash pit below. This operation takes place throughout the entire fire pot and besides crushing the clinkers, it effectually raises and agitates the entire contents of the fire pot, completely and thoroughly removing all ashes, and that without packing the fuel, as the operation is one of lifting and loosening. The shafts are so constructed that when the cutters on one side are elevated and those on the adjoining shaft are depressed, the spaces at the end of the cutters will be closed, preventing the escape of the fuel at these points. The points of the cutters do not extend into the fire, as no matter in what position the cutters may be, they are always on the same horizontal plane. The grate frame is supported on rollers, so it can be easily drawn outwards for dumping, or entirely removed for repairing or any other purpose. The frame is made in two parts joined together by bolting, so that any part if damaged can be removed and a new part easily and quickly put in; ample provision has

SHAKING GRATE FOR ROUND FURNACES.



been made for expansion and obstructions. By the arrangement and construction of the cutters and bars, the air for draft is so well subdivided, heated and distributed to all parts of the Fire Pot, that a more perfect combustion of the fuel, a stronger and larger amount of heat and more economy is obtained, than by the use of any other Shaking Grate or Grate bar yet devised.

This Grate is furnished with our furnaces instead of the ordinary Grate Bars at a small advance in price compared to its great economy and labor saving value. When the Shaking Grate is attached to our furnaces a square air-tight door is substituted for the round door.

All improvements in our furnace are fully secured by LETTERS PATENT. It is offered as a complete and desirable HEATING APPARATUS in every respect; and, if properly taken care of and cleaned, it will cost but little to keep in repair. All furnaces sold by us and put up by experienced workmen furnished by us, are guaranteed to give satisfaction, thereby relieving the purchaser of all risks should they fail.

HEATING CONSERVATORIES.

Water Backs or Coils can be easily put in our Furnaces for heating Conservatories and other rooms by Hot Water Circulation. This is one of our specialties.

OBJECTIONS TO CAST IRON FURNACES.

It is the universal testimony of the leading scientific men of this Country and Europe, from the many practical tests and experiments they have made with Furnaces and Stoves constructed of the various materials used for the purpose, "That it is impossible to construct FURNACES OR STOVES of CAST IRON and secure total impermeability to the fatal gases generated (carbonic oxide and carbonic acid), owing to its porosity or crystalline structure," and, "That these poisonous, health and life destroying gases, can be securely held, until safely conveyed to the smoke flue or chimney, by making the Furnaces of *wrought iron plates*, riveted together tightly as a *Steam Boiler*." For full account of these interesting experiments, see "Anthracite and Health," by Dr. Geo. Derby, Boston, Mass.; "Notes on Experiments on the Permeability of Cast Iron by Gases," by Gen. Morin, Paris; "London Philosophical Magazine," vol. 22, 1866; "Appleton's Journal," vol. 3, No. 53; "Boston Journal of Chemistry," vol. 4, No. 10; "Scientific American," 1871; and other authorities.

"Furnaces should not be made in part of *cast iron* and in part of *wrought iron*, as the different crystalline structure of these metals creates energetic galvanic currents, and where the two join, oxidation goes on so rapidly, assisted by the deposits of ashes about the joints becoming moist when the furnace is not in use, that the whole is quickly destroyed."

ALL CAST IRON FURNACES are necessarily made in pieces, the joints being cemented with putty, or similar material; some are made with grooves in which the different parts rest; these grooves being filled with sand or cement, the constant expansion, contraction and changes of heat invariably warp these pieces, loosen the fittings, the cement falls out, and large openings are thereby made for the escape of GAS, DUST and SMOKE into the air chamber; no fastenings yet devised are sufficient to keep these pieces from separating by the expansion and contraction of the metals, nothing can resist this power. When the damper in Smoke Pipe of Furnace is partially or wholly closed to regulate the draft, especially when the fire is fixed for the night, the escape of gas through these openings or joints is very largely increased, making them very objectionable and dangerous; these are incontrovertible facts.

STEAM AND HOT AIR.

Great efforts are constantly made against WARM AIR FURNACES and in favor of STEAM FOR HEATING PURPOSES, asserting that the heat from Steam Heaters is more moist and healthy than that from Warm Air Furnaces, etc., which is not true as, " Iron heated to any possible point attained in Hot Air Furnaces has no power to abstract moisture from the air. Theory and practice in this respect are in perfect accord. Each confirms the other." Buildings specially arranged for drying cotton, cloth, wool, lumber and other materials are usually heated by *Steam pipes.*

When the Radiators or Coils are placed in the apartments there is no circulation, as the air in them is heated by direct contact with them; when they are placed in the cellar under the hot air flues, the steam often condenses before it reaches those flues farthest from the boiler, making it necessary to keep up large fires and heavy pressure to obtain the required heat in those apartments during cold weather.

Other disadvantages in the use of steam for heating purposes, are: the expense in erecting and maintaining the apparatus, the time required to raise the water to the boiling point and fill the Radiators with steam, the difficulty of obtaining moderate heat in mild weather, and the necessity of watchfulness to avoid damage by accidents that frequently occur.

In the use of steam for any purpose there is always more or less danger, as pressure, no matter how small, implies force, and, with the ability to produce force, the possibility of explosion, as safety valves and similar devices are not always reliable, especially when left to the care and management of unskilled, inexperienced or careless servants, a fact too often proved.

PATENTED

WROUGHT IRON AIR-TIGHT FURNACE

FOR BURNING

BITUMINOUS COAL OR COKE.

5 SIZES.

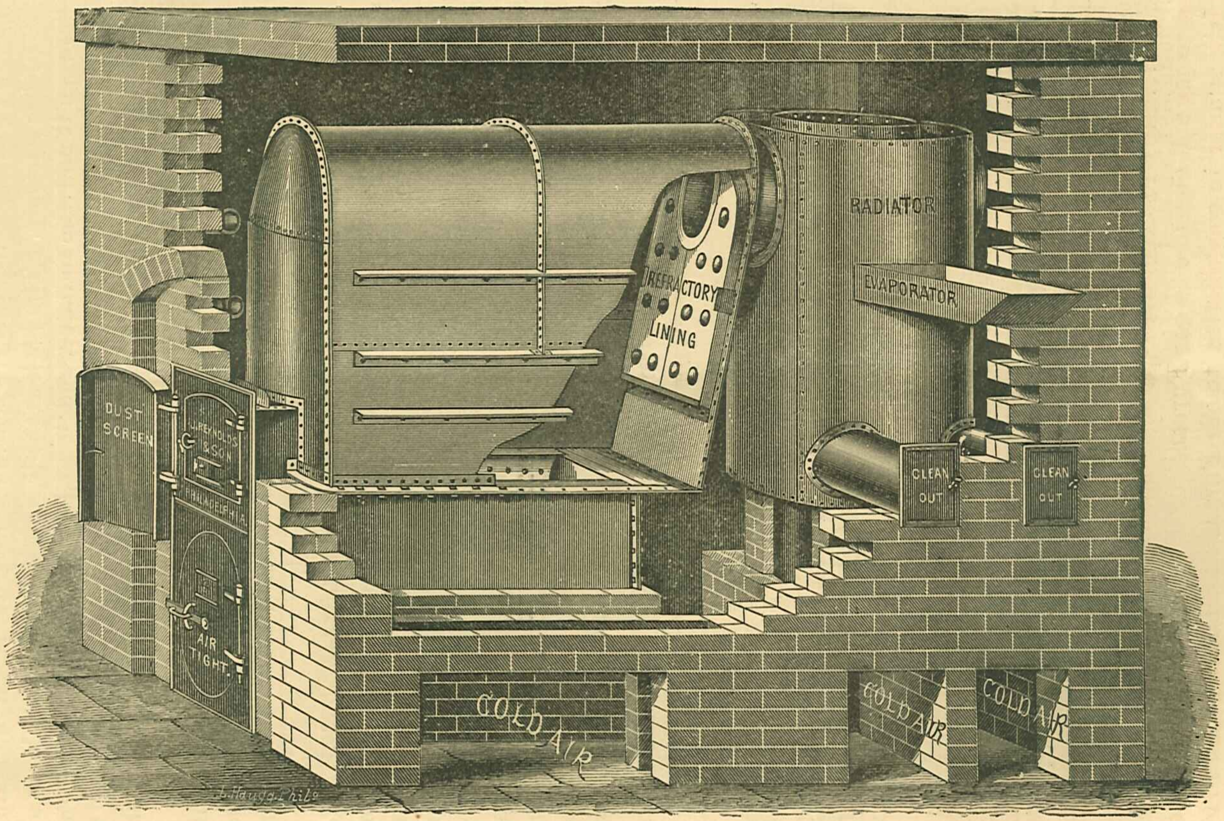
A WARM AIR HEATING APPARATUS, specially and perfectly adapted to the economical and satisfactory burning of BITUMINOUS or WESTERN COAL and COKE, and in which all kinds of fuel can be used, one equally as well as the other without changing any part of it, is our WROUGHT IRON AIR-TIGHT FURNACE. It is without any doubt the only one in which this can be, and is done with universal success and satisfaction, it is unhesitatingly recommended, from the severe tests which have been made with it, as the only complete and reliable SOFT COAL HOUSE-WARMING FURNACE in this country.

The great disadvantages in ALL CAST IRON and other FURNACES for burning this description of fuel, are their imperfect construction, the frequent attention required to keep them supplied and replenished with coal, the filling up of the pipes and flues readily and continuously with soot and dirt, the great difficulty experienced in cleaning them properly, the inevitable cracking and burning out of the Fire Pot, pipes, flues, and other parts exposed to the direct action of the fire, especially those made of cast iron, constant provoking and disagreeable annoyance from the Smoke, Gas and Dust escaping from the many joints, cracks and openings into the air chamber, being dispersed over the entire house, and their frequent liability to expensive repairs, if not entire renewal. These are all overcome and obviated in our Furnace.

It is similar in construction to our Furnace for burning Anthracite Coal, except that it is made of heavier iron, well stayed and braced with angle irons and strengthening girders to prevent the possibility of its warping. It is made wider above the fire, with a round projecting front, the fire pot is deeper and of sufficient capacity to hold, under ordinary

WROUGHT IRON AIR-TIGHT FURNACE AND RADIATOR,

FOR BITUMINOUS COAL.



circumstances, fuel for one day's consumption; the clay tile linings of the fire pot are wider at the top than at the grate, and so shaped as to cause the flames to be directed towards the centre of fire pot instead of against the sides of the Furnace. The back is made slanting, to allow a large air space between it and the radiator, and it and the collar connecting furnace with the radiator are lined with patented refractory clay tiling to prevent damage by the flames. The chambers for heating the air for the combustion of the Smoke and Gases and the perforations for admitting it in jets over the fire, are made in the clay tile. It can be thoroughly cleaned at any time without annoyance or disturbing the fire, by either scraping out the soot, or setting it on fire and burning it out; sufficient convenient openings for the purpose being provided.

There not being any dampers in our Furnace, the flues are unobstructed and a free exit is given to the unconsumed products of combustion. The fire and heat is kept under perfect control by the BRASS SLIDE in the AIR-TIGHT DRAFT-DOOR. The commonest WESTERN or BITUMINOUS COAL, SLACK, COKE, and in fact anything used as fuel can be burned in it. Being specially made for Soft Coal, there is not the slightest difficulty in burning either Hard Coal or Wood in it at any time, no change of any part being necessary. We cannot say too much in its favor, and refer with great pleasure to the many well-known parties in the Soft Coal region, who are using them.

1776. THE PATENTED 1876.

CENTENNIAL WROUGHT IRON FURNACE

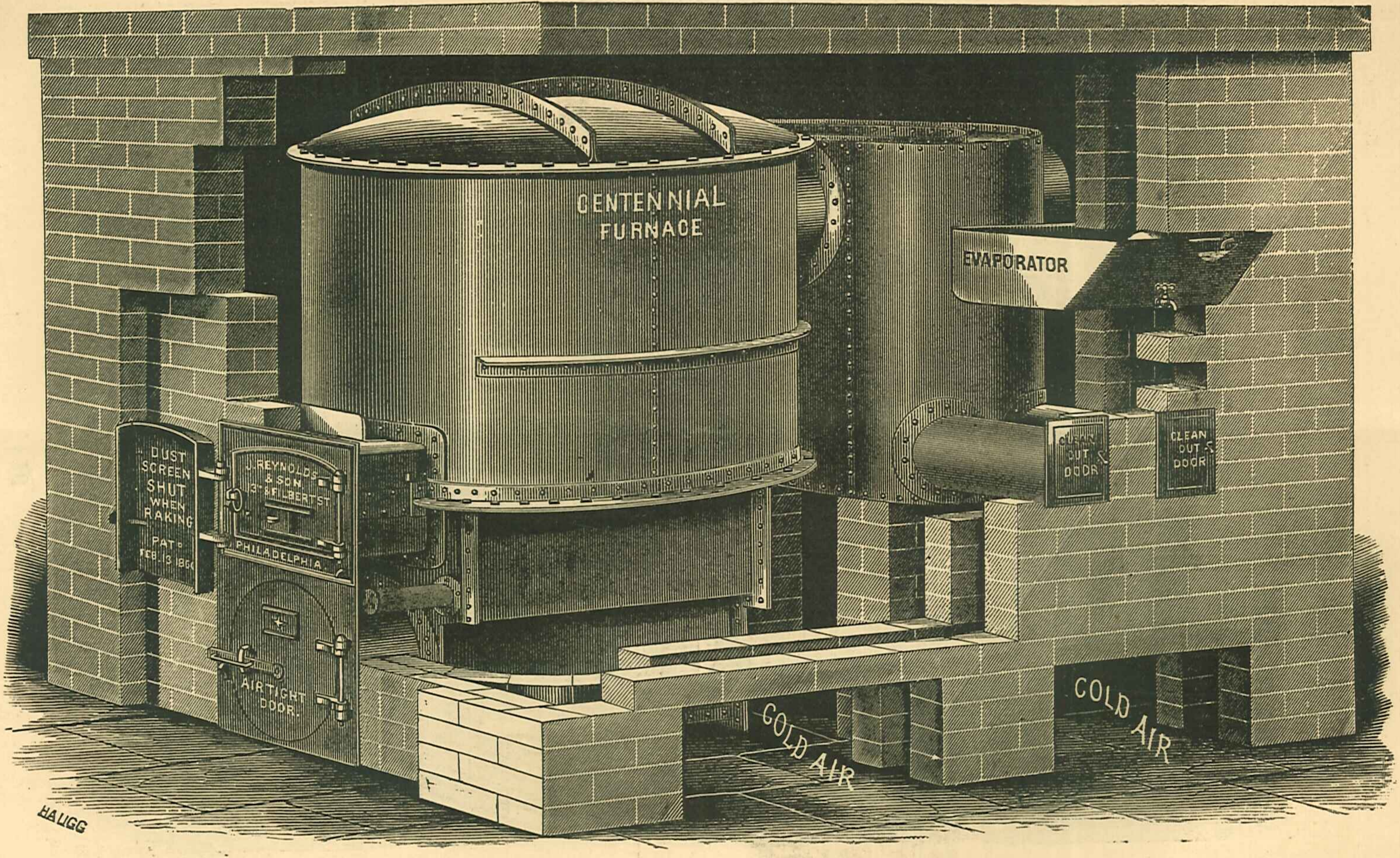
FOR BURNING

BITUMINOUS COAL OR COKE.

FOUR SIZES FOR BRICK-WORK.

This furnace is specially designed for and adapted to the Warming of Public Buildings, Halls, Churches, and extra large Private Residences, where a very great amount of heat is required, and Bituminous Coal or Coke exclusively used for fuel.

After a long practical experience with Bituminous Coal, becoming acquainted with the destructive effects of the intense heat generated by it on all kinds of Heating Apparatus, we have not spared any expense what-


CENTENNIAL
FURNACE
EVAPORATOR
DUST
SCREEN
SHUT
WHEN
RAKING
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FEB. 13 186
J. REYNOLDS
& SON
13th & FILBERT ST
PHILADELPHIA
AIRTIGHT
DOOR.
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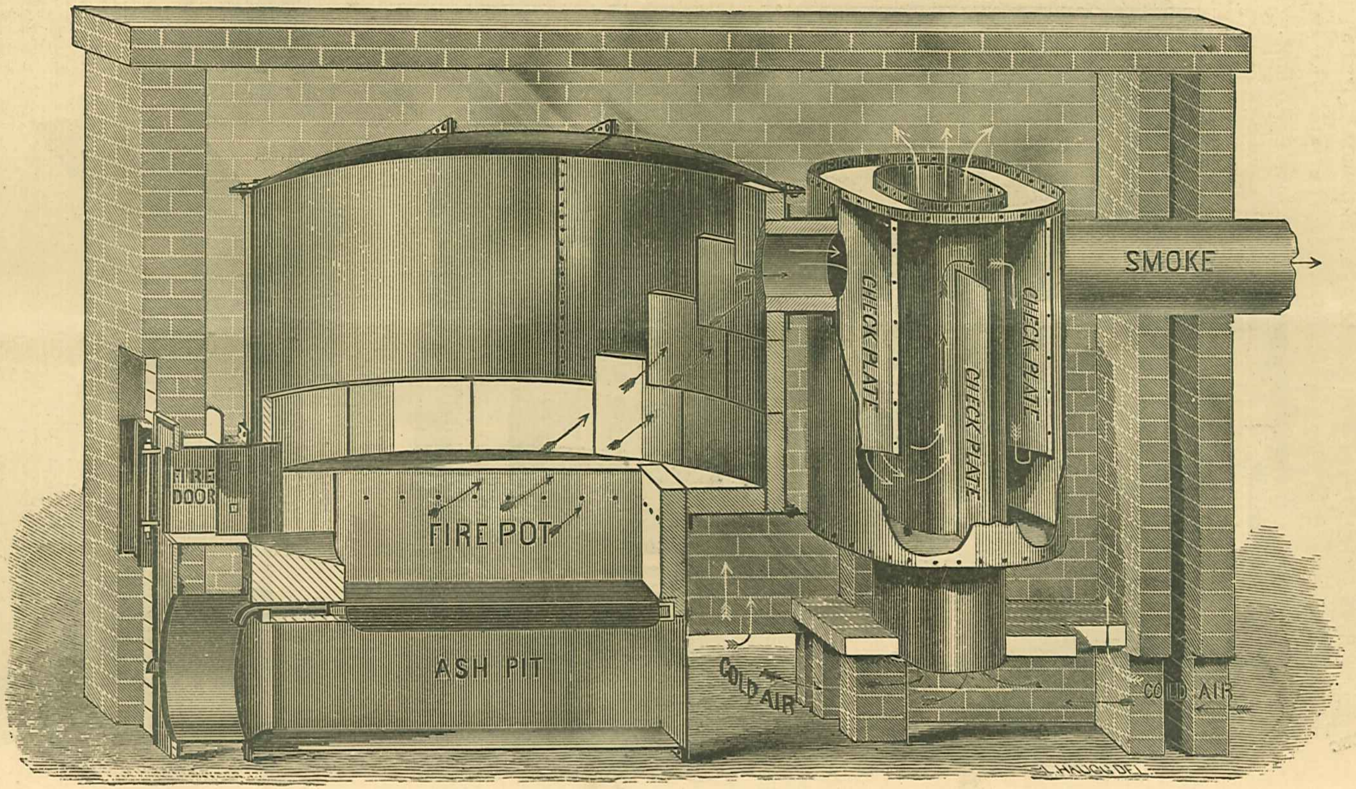
COLD AIR
COLD AIR
HAUGG

SECTIONAL CUT SHOWING INTERNAL CONSTRUCTION OF CENTENNIAL FURNACE.



ever in the construction of the Centennial Furnace. It has all the improvements suggested by our careful investigation and the experience of those who have been using this kind of fuel. We do not offer it as a cheap ordinary affair, but as a perfect Heating Apparatus in every respect, believing it to be the most efficient, durable and indestructible Furnace ever made, and that it will stand any fair test to which it can be submitted without damaging results.

It is oval in shape, with a rectangular shape Fire Pot, and oval Radiator (see illustrations pp. 15, 16).

It is constructed of the very best heavy (densely rolled) Charcoal Bloom iron plates, carefully and securely riveted together, the top is concave and made of three pieces of iron, riveted together through raised flanges, forming strengthening girders, insuring great strength and an impossibility to warp or injure it.

The sides and back above the Fire Pot and the Collar connecting furnace with the Radiator are lined with patented refractory clay tiling, as an extra precaution to prevent warping and damage by the flames or intense heat generated. The Fire Pot and grate are made similar to that of our other Furnaces; the clay tile are very much heavier and larger, ample provision being made for the combustion of the Gas and Smoke.

The Radiator attached to this furnace is the same in style and construction as that for our other furnaces, only being made larger and heavier to correspond with the furnace.

The Centennial is also regulated and controlled in the same manner as our other Furnaces, by the air-tight door with brass slide, and has all facilities for cleaning without disturbing the fire.

The linings or any part can be easily repaired and replaced by any mechanic without the least difficulty or taking furnace apart.

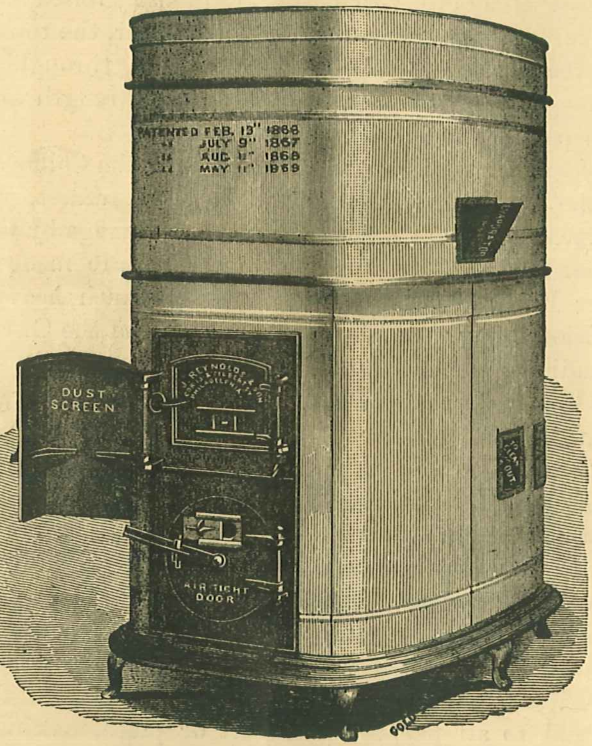
The entire Furnace is composed of only three parts. Top or Body, Ash Pit, and Radiator, all of wrought iron. The Body is securely bolted to the Ash Pit, and with the Radiator properly adjusted, the apparatus is practically and to all purposes one part or piece, making it absolutely Gas, Dust, and Smoke-tight, and not in the least affected by expansion or contraction.

It is easily set up in brick-work by any first-class bricklayer, with the instructions given him. It requires and must have a very large and abundant supply of cold air well distributed to all parts. When set up by brick-layers *furnished by us we guarantee them to give satisfaction.*

THE PATENTED

WROUGHT IRON AIR-TIGHT PORTABLE FURNACE.

4 SIZES.



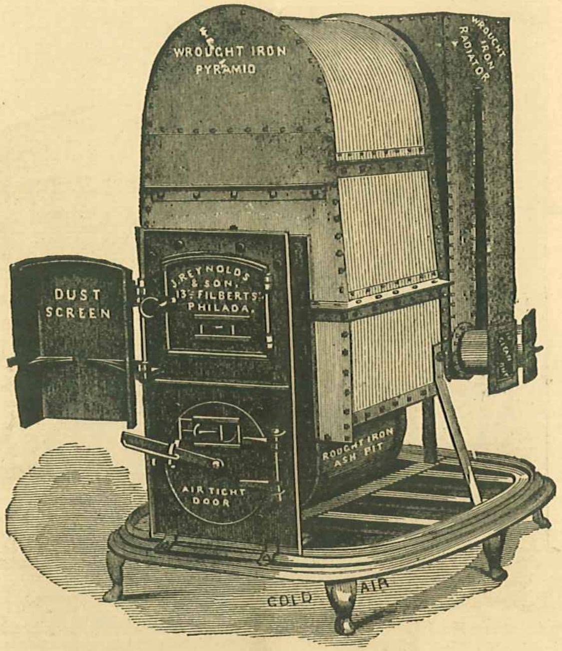
FOR BURNING ANTHRACITE AND BITUMINOUS COAL, COKE OR WOOD.

To supply the demand for a First-class Portable Furnace, similar to the one we make for setting in brickwork, we offer to those in want of a perfectly reliable, durable and economical apparatus, the best Wrought Iron Air-Tight Portable Furnace ever made in this country.

It is made of the very best materials and workmanship; if care is taken with it, it will cost very little for repairs, to say nothing of the economy in fuel.

In its construction, it is in every particular, like our Furnace for setting in brickwork, with the addition of a Wrought Iron Ash-Pit or Bottom; the whole structure is made of the very best quality of heavy iron securely riveted together.

FURNACE WITH CASING REMOVED.



It is regulated and controlled by the Brass Slide in Air-Tight Draft Door, or by the Automatic Heat and Draft Regulator.

For warming dwellings and places in which Portable Furnaces answer the purpose, they have no equals. Anthracite or Bituminous Coal, Coke or Wood can be burned in it without changing any part of it. We also make three sizes specially for burning Bituminous or Western Coal, which have the same peculiarities in construction for that fuel as the Furnace for setting in brickwork.

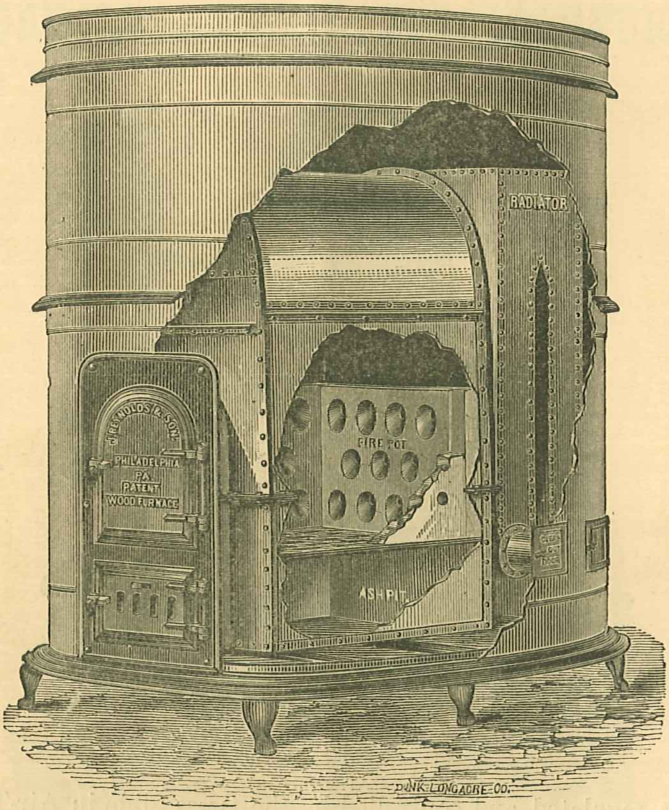
They are furnished with Evaporators and Permanent Wrought Iron Radiators, and enclosed in either Galvanized or Russia Iron Cases.

THE PATENTED

WROUGHT IRON WOOD FURNACE.

PORTABLE AND FOR SETTING IN BRICKWORK.

4 SIZES.



We also manufacture a Wrought Iron Furnace for burning wood exclusively, and from the extra care taken and quality of materials used in its construction, we confidently assert, that it is without any exception, the most substantial, durable, efficient and economical Wood Furnace ever placed before the public. The same style of workmanship is found in this as in our other furnaces. Being made of heavy wrought iron, well and substantially riveted together. The wood is burned on an open plate or grate. It has an ash pit below the grate, and is lined with heavy clay tile. The Radiating Surface is increased and the heat economized by the permanent Wrought Iron Oval Radiator. This furnace heats up quickly, requires little attention, economizes fuel, can be cleaned easily without disturbing it, and, if properly taken care of, will last a life time. The Portable Furnaces are made in the same manner and enclosed in either galvanized or Russia Iron Casings.

KEYSTONE WROUGHT IRON FURNACE,

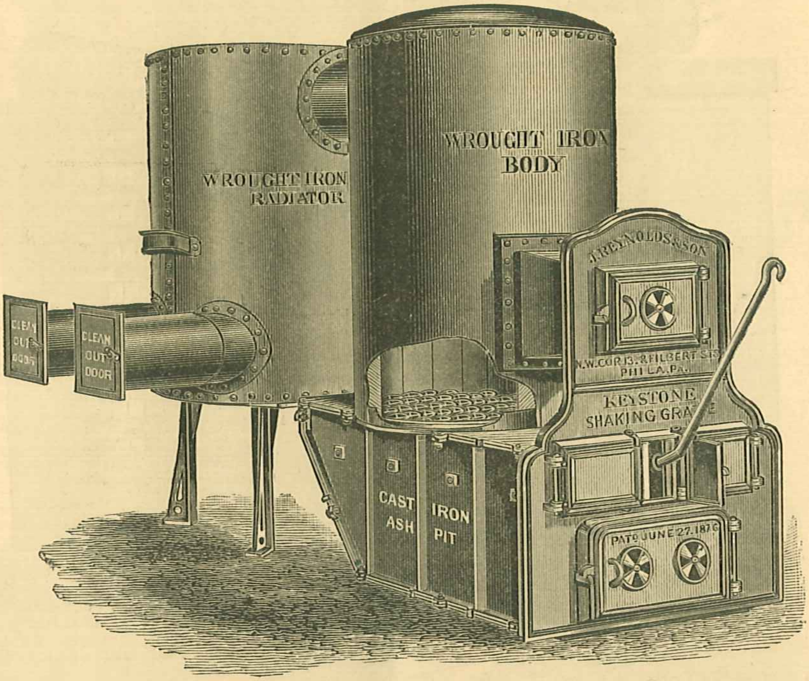
WITH PERMANENT

WROUGHT IRON RADIATOR

AND

SHAKING AND CLINKER GRINDING GRATE.

SIX SIZES FOR SETTING IN BRICK WORK.



IRONWORK COMPLETE, READY FOR SETTING.

The Keystone is a first-class Wrought-Iron Furnace. It is constructed of heavy iron well riveted together, the head or dome being made of extra heavy iron. The Fire Pot is round, and lined with clay tile. It is furnished with the oval permanent Radiator, Evaporator, the "Reynolds" shaking and clinker grinding Grate, and is Gas and Dust tight; can be easily cleaned at any time without taking apart; has the largest available radiating surface; and is more efficient and durable than any cast iron heater. It is the cheapest and most powerful heater of its class now offered for sale, and well worth examining.

KEYSTONE WROUGHT IRON FURNACE

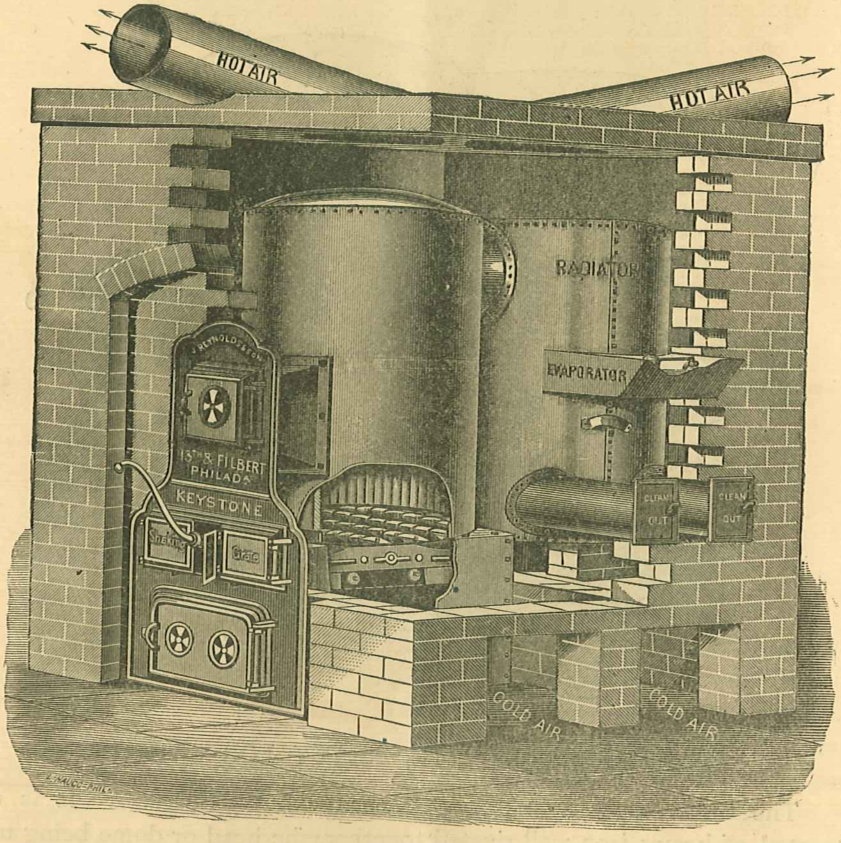
WITH PATENTED

SHAKING AND CLINKER GRINDING GRATE,

AND

CAST IRON ASH PIT.

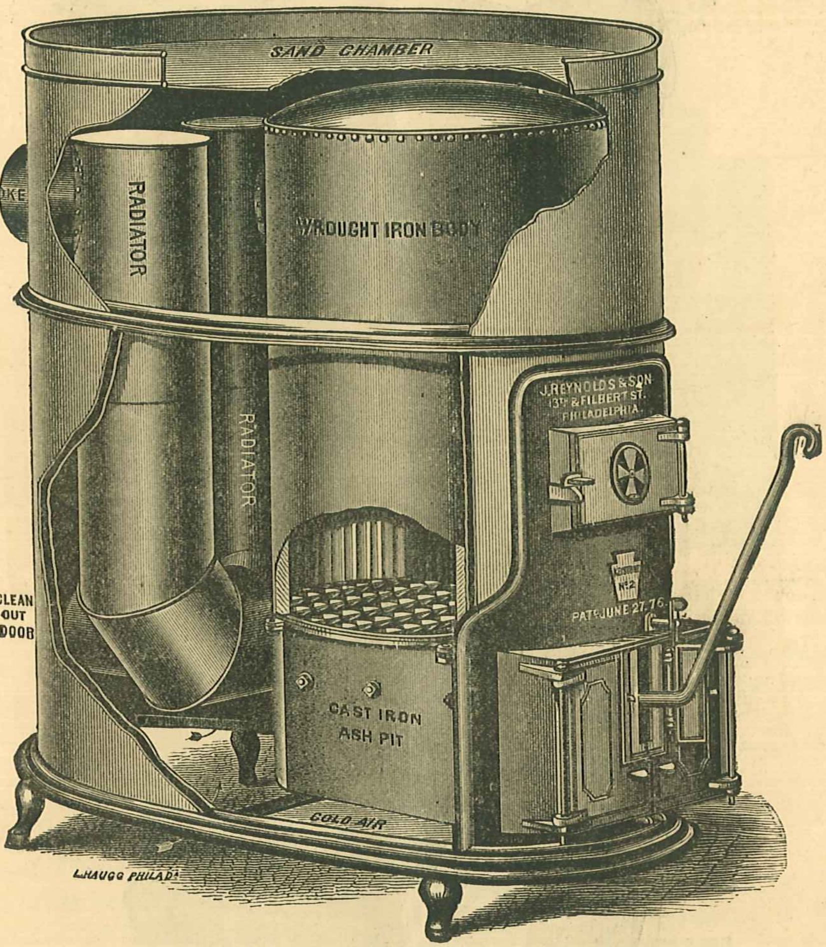
SIX SIZES FOR BRICK-WORK.



This represents the Keystone Furnace with our Patented Shaking and Clinker Grinding Grate attached, for the thorough and instant removal of ashes, clinkers and other obstructions from the Fire Pot. This grate is also supported on rollers, for dumping or repairs (see description of grate on page 9). We have also attached a Cast Iron Ash Pit. With all of these improvements, it is the cheapest and best round furnace to be found anywhere. We invite the most critical examination of its construction and superior merits.

KEYSTONE

WROUGHT IRON PORTABLE FURNACE.

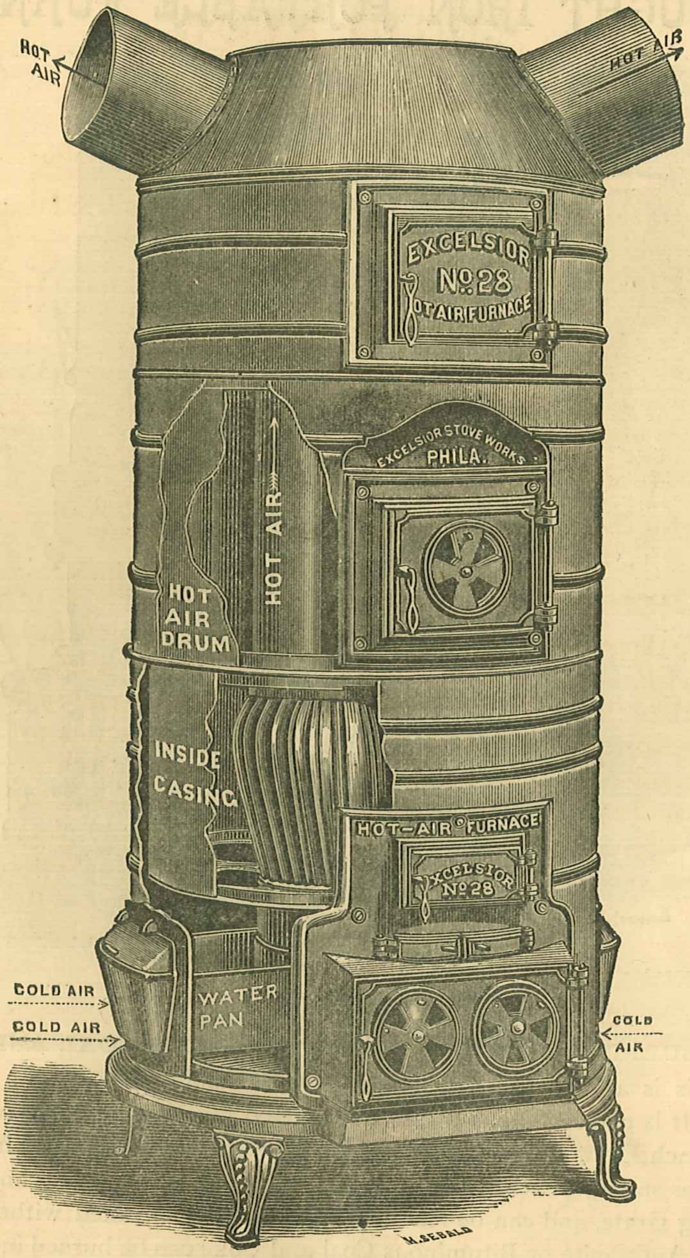


2 SIZES—No. 1 (24 in.); No. 2 (28 in.)

FOR BURNING ANTHRACITE OR BITUMINOUS COAL AND COKE.

This is a First-Class, Wrought Iron, Portable Furnace at a moderate price. It is made of No. 14 iron, well riveted together. It has two permanent 9-inch Drums, is gas, dust and smoke-tight; is lined with heavy clay linings or staves, 3 inches thick; is furnished with the shaking and Clinker-Grinding Grate, and can be readily and thoroughly cleaned without taking apart. Anthracite or Bituminous Coal and Coke can be burned in it without changing any part of it. They are cased in either Galvanized or Russia Iron, and are the best made, most powerful, durable and efficient Portable Furnaces for the price ever offered for sale.

EXCELSIOR PORTABLE FURNACE.

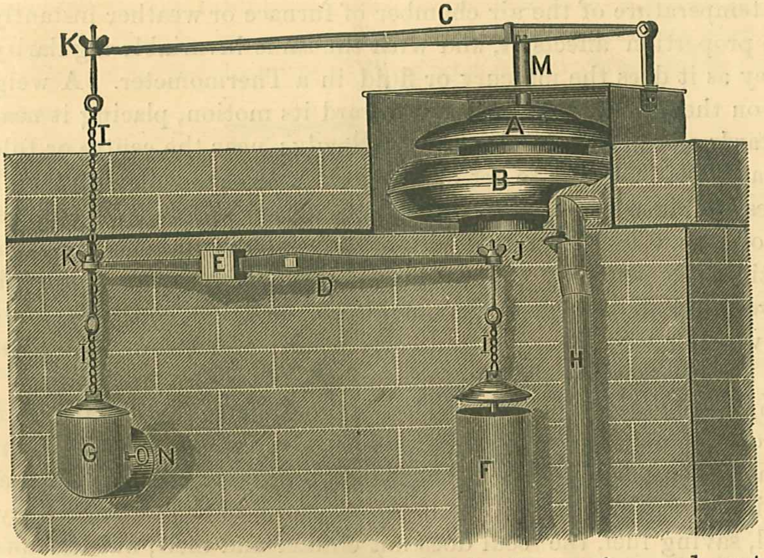


FOUR SIZES.

28 in. 32 in. 36 in. 40 in.

This is a compact, and efficient Furnace. It has a corrugated Cast Iron Cylinder, Shaking and Dumping Grate, is well made, and sold at a very low price.

PATENT AUTOMATIC HEAT AND DRAFT REGULATOR.



This Apparatus is designed to automatically regulate and control the Draft and Heat of Furnaces and Stoves, and maintain a uniform temperature within the house, notwithstanding the various and sudden changes of temperature in the weather, without any other attention to the furnace than that of raking out the ashes and supplying with fuel.

It consists of several shallow air-tight tin drums, having broad flexible or expanding heads laid one upon the other, and placed in a tight sheet iron box at any part of, and having an opening into the Air Chamber of Furnace, that they may be influenced by the heat of the same; the top drum has a convex or conical head on which is a rod acting as a support for the lever which is laid over and resting upon it, having its fixed fulcrum at its centre; at each end of this lever are chains with adjusting screws connecting it with, and operating two air-tight ground jointed drop valves, one of these valves is in a pipe which supplies air for draft under the grate to promote and support combustion, the other is in the pipe that admits air to the smoke flue of furnace to assist in checking the draft.

As the furnace heats, the hot air in the furnace chamber acts on the heads of these drums, the air within them gradually expands, forcing the heads outwards, thereby raising the lever, closing the valve in the draft pipe and simultaneously opening the one in the check pipe. As the furnace cools, or the heat in air chamber diminishes from any cause, the air in the drums contracts, the heads come together, letting the lever down, opening the valve in draft pipe, and closing the one in check pipe; this motion and action of the drums is not rapid or sudden, but gradual and regular, the air in them is so sensitive, that the slightest change in the temperature of the air chamber of furnace or weather instantly and in like proportion affects it, and with the same invariable regularity and accuracy as it does the mercury or fluid in a Thermometer. A weight is placed on the lever to accelerate or retard its motion, placing it near the end retards and makes it check more slowly; near the centre or fulcrum accelerates and causes it to act more quickly. As the cellars in which the furnaces are placed are generally closed, they are warmer, and the temperature of them not changed with the weather outside, we have a small tin pipe attached to the box in which the drums are placed, to convey cold air to it from the outside of the house, so that any change of the weather has its instant and corresponding effect on the air in the drums, and thereby the action of the valves.

This automatic regulator is simple in construction, not liable to get out of order and need repairs, is inexpensive, durable, having no rubber diaphragms or other destructible parts, is perfectly reliable, and besides maintaining a uniform and even temperature in the house, is very economical, saving fuel, the coal does not clinker and melt, but the combustible portions of it are all consumed.

It is furnished with our furnace, to those who desire it, for a small extra charge in comparison to its many valuable and decided advantages, and can be attached to any furnace or Heating Apparatus.

CONSTRUCTION OF FLUES.

Too much care and attention cannot be given to the proper construction of Flues for either Smoke or Hot Air. Many a FURNACE HAS BEEN CONDEMNED, PRONOUNCED A FAILURE, and continual trouble given to, and expense incurred by the maker, when the entire fault and difficulty was in the very careless and imperfect manner in which the flues were built. It often seems that those having them in charge, suppose that any flue will answer the purpose no matter how small, crooked or badly finished, so that it is built in some place that does not interfere with the symmetry or appearance of the apartments. Smoke and hot air flues should be at least 9x13 inches in the clear; smaller ones to be used only as a case of necessity. Smoke flues if possible should be topped out above the highest point of the roof to prevent the currents of air being driven down them, and otherwise impeding the draft. All flues should be uniform in size, well and smoothly pargeted with good strong mortar; the smoke flue should be so carefully separated from the hot air flues as to always prevent the possibility of an opening from one to the other. Whenever practicable hot air flues should be built in the inner walls and located as near each other and the heating apparatus as possible, to avoid long hot air pipes through the cellar. These matters should receive personal attention as the building progresses, and not be left to the judgment of indifferent workmen, as any attention given to the flues is well repaid by the economy and comfort in heating a house. We will cheerfully give our personal attention to the locating of flues, and proper directions for their construction.

VENTILATION.

So much has been written and said on this subject, that we intend only to state a few facts and give our advice in reference to Ventilation as it relates to the heating, comfort and healthy condition of our dwellings. It is certainly an undisputed fact, that a well heated house is more comfortable and healthy, in proportion to its being well Ventilated. What we desire, is an active circulation of pure warm air through the different apartments and a free and unobstructed exit for all that becomes impure. Hot air as it enters the rooms through the Registers immediately ascends towards the ceiling, and with more or less rapidity, as it is more or less heated. Cold and foul air is found at the floor, or below the breathing line. Now if an opening be provided in a flue near the floor for the escape of this cold or foul air, the hot air as it continuously enters and rises forces the cold air out, creating at once a circulation; various methods have been adopted for accelerating and increasing this circulation, among the most approved and successful of which, are: That of having Open Grate Fires or open Fire places in as many of the rooms as possible, or by making the Smoke flues for Heating Apparatus and Range larger than usual, and putting in them a Cast Iron or Terra Cotta Pipe for the Smoke, using the space around it for a ventilating Shaft, or flue, the pipe becomes very hot by the passage of the Smoke and Gas through it, and by being thus heated creates a very strong draft upwards in the flue around it, in all rooms through which these flues pass, openings can be made in them for Ventilation, at the floor or just above the Washboard, those rooms not adjacent to the flues, can have openings made in the floor, and carried between the joists to them, the pipes should be well stayed and extend up to the top of the chimney, no openings need be made into them near the ceiling, as they would let the hot air escape, should a room become too hot, close the hot air Register and open a door, never open a window, especially in a School House, Church or Public Hall, until all other means to cool them have been exhausted, as this allows the hot air to escape and the cold to rush rapidly in. If either of the above plans are adopted and carefully followed the complete ventilation of the building will be successfully accomplished. No house should now be built without some provision being made to ventilate it. We will at any time properly locate ventilating flues in buildings or on the plans and give any information necessary.

COOKING APPARATUS

FOR

HOTELS, RESTAURANTS,

PUBLIC INSTITUTIONS and PRIVATE DWELLINGS,

FOR BURNING

Anthracite and Bituminous Coal

OR WOOD.

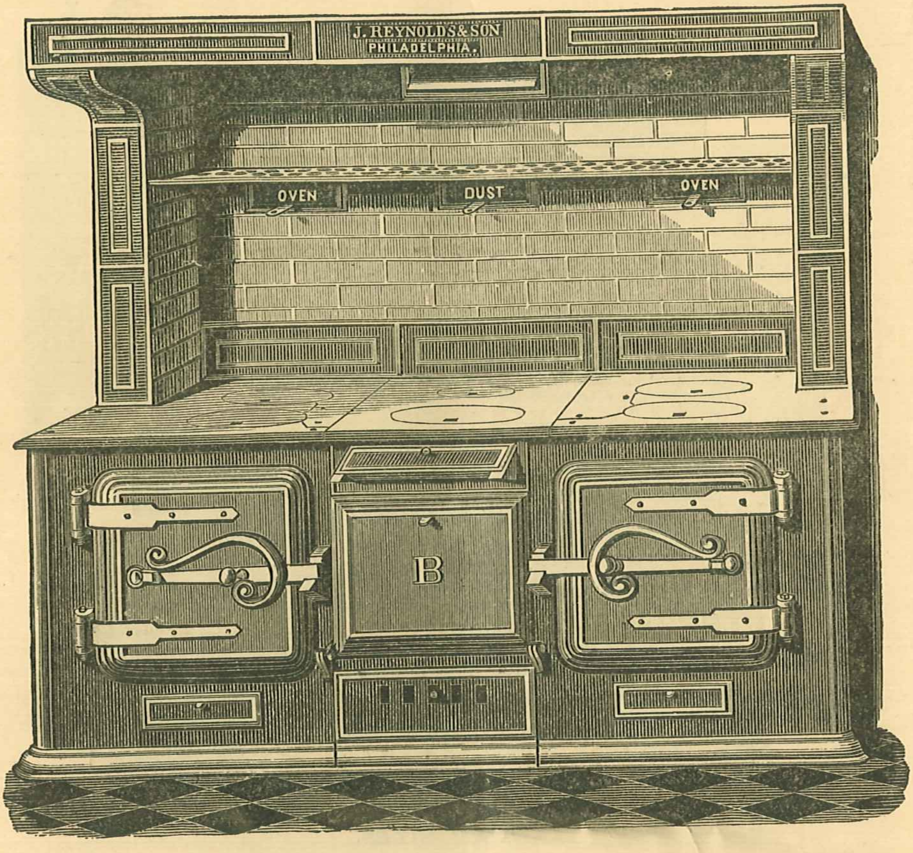
KITCHENERS, FRENCH RANGES, OYSTER RANGES, HEATING RANGES, FRENCH BROILERS, AND KITCHEN FURNITURE GENERALLY.

We are manufacturing and have for sale all the variety of COOKING APPARATUS of the most approved kind, combining the modern improvements required by the different styles of cooking. Our Ranges are made of Heavy Castings and great care taken in their construction and general appearance. They are guaranteed to give satisfaction.

The fitting up of FIRST-CLASS KITCHENS is a specialty, to which we give our personal attention.

Estimates and plans will be furnished for Cooking Apparatus of any description.

B. AND C. KITCHENERS.

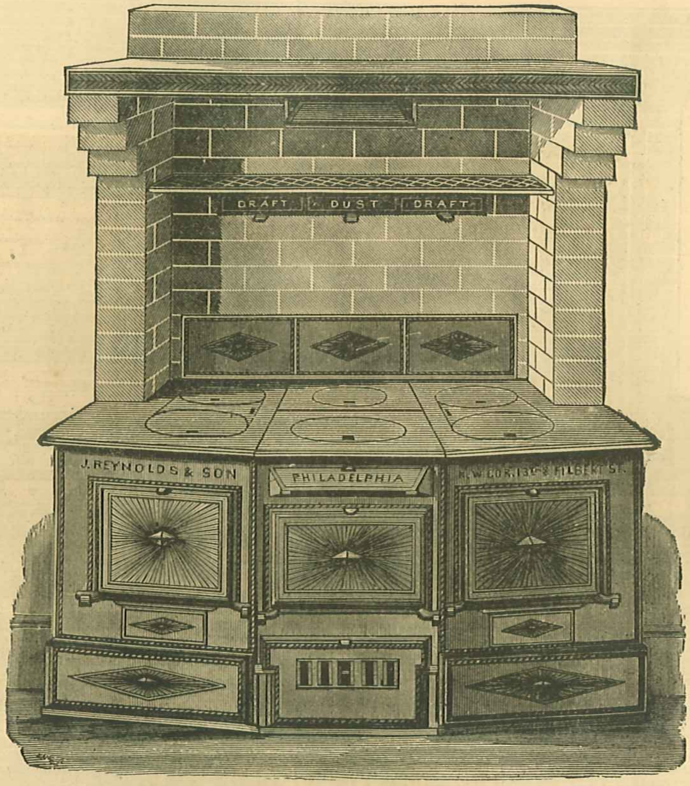


PLAIN BLACK, OR POLISHED FRONTS.

B. Kitchener ; length 5 feet 9 inches. Grate 16 inches.
Two Ovens each 16 inches high, 16 inches wide, and 24 inches deep.
C. Kitchener ; length 4 feet 9 inches. Grate 14 inches.
Two Ovens each 13 inches high, 13 inches wide and 22 inches deep.

These are the heaviest, most substantial and elegantly finished Ranges in this City. They are designed for first class Kitchens, small Hotels and Restaurants ; have large ovens, plate racks and grates adapted for roasting in front, and can be set up with water back and circulating boiler, or with boiler behind the Range.

SMALL DOUBLE OVEN FAMILY RANGE.

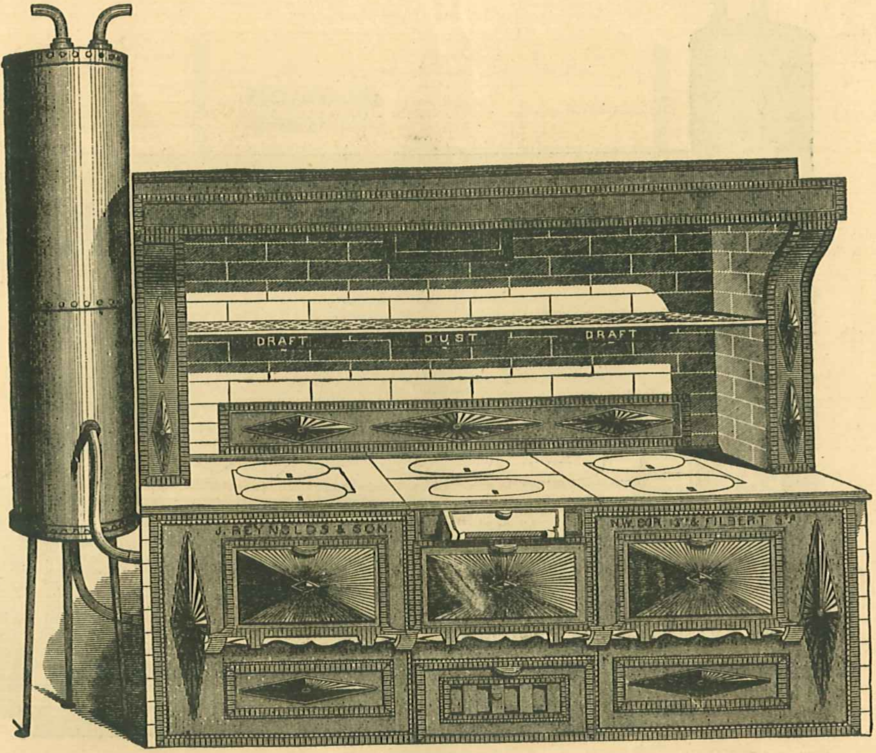


TWO SIZES.

Length 4 feet 3 inches and 4 feet 5 inches. Grates 14 and 16 inches.
2 Ovens each 10½ inches high, 12 inches wide, and 22 inches deep.

This Range has been in use for a number of years, and has given in every case perfect satisfaction. It is made of heavy castings well finished and put together. It has been and will continue to be a favorite among housekeepers. It has a roasting grate and plate-rack and set up with either Water back and Copper tubes for Circulating Boiler or with Back Log Boiler.

LARGE DOUBLE OVEN FAMILY RANGE.

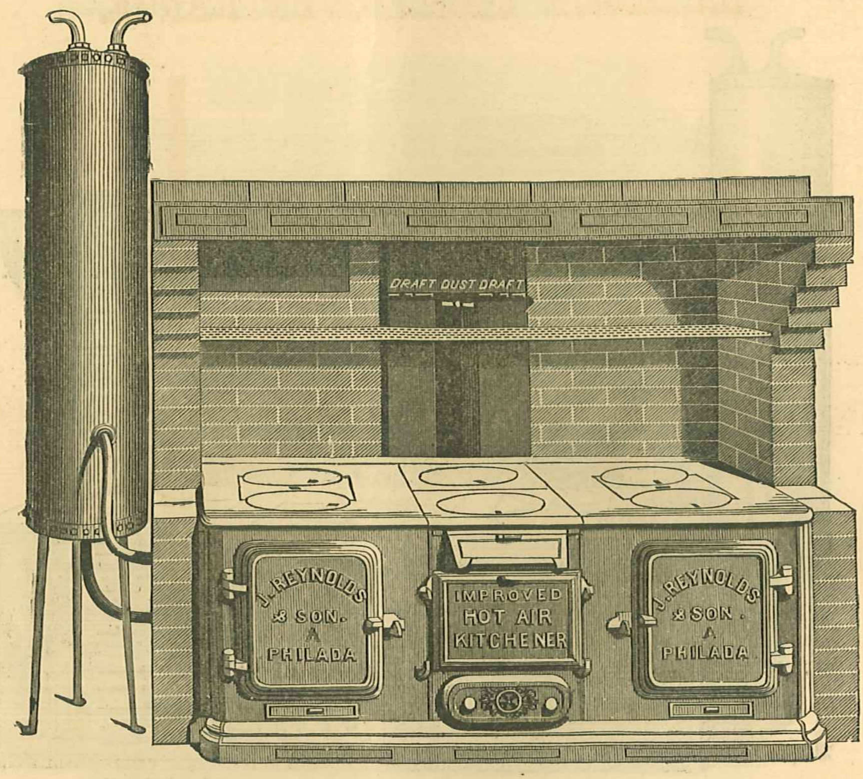


TWO SIZES FOR WOOD OR COAL.

Length of Range 5 feet 3 inches and 5 feet 5. Grates 14 and 16 inches.
Two Ovens each 10½ inches high, 14½ inches wide, and 22 inches deep.

This is one of our oldest and well tried Ranges which has given universal satisfaction; the castings are very heavy and well finished, it has a large top surface. Grate adapted to Roasting or Broiling in front, and plate-rack. It is furnished either with Water Back and Copper Tubes for Circulating Boiler or Back Log Boiler and warranted to give perfect satisfaction.

IMPROVED HOT AIR KITCHENER.


DRAFT DUST DRAFT
J. REYNOLDS & SON. A PHILADA
IMPROVED HOT AIR KITCHENER
J. REYNOLDS & SON. A PHILADA

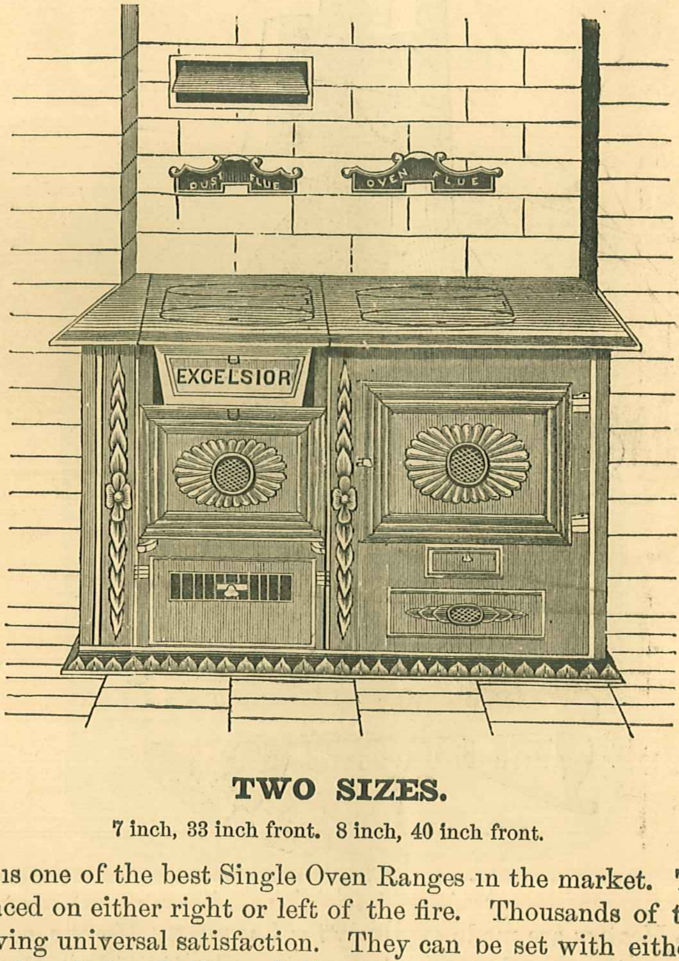
WITH BLACK OR POLISHED FRONTS.

2 Sizes.

Length of Range 5 feet 3 inches and 5 feet 5 inches, Grates 14 and 16 inches.

This cut represents our Patented Flat Top Heating and Cooking Range. The Castings are made heavy and mounted with care, it has Grate adapted to Roasting and Broiling in front, and plate rack, and will heat satisfactorily a room over it, without requiring additional fuel, the surplus or wasted heat of the Range being utilized without interfering with its baking or cooking, no odors from the cooking pass up with the heated air, it is set up with either Circulating or Back Log boilers.

EXCELSIOR SINGLE OVEN RANGE.

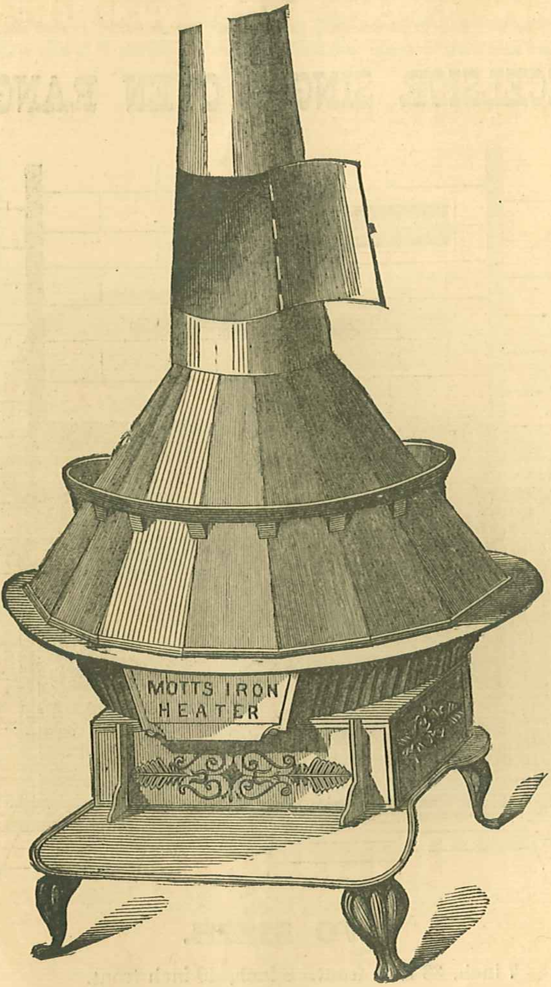


TWO SIZES.

7 inch, 33 inch front. 8 inch, 40 inch front.

This is one of the best Single Oven Ranges in the market. The oven can be placed on either right or left of the fire. Thousands of them are in use, giving universal satisfaction. They can be set with either Water Back and Circulating Boiler or boiler behind the fire.

IRON HEATER.



(NO. 2 HEATS 32 IRONS.)

These Heaters are made expressly for LAUNDRIES, HOTELS, and PUBLIC INSTITUTIONS, they are heavy and durable, and of different sizes to heat from 9 to 100 irons. Single or double coils of Pipe can be attached for Heating from 50 to 300 gallons of water.

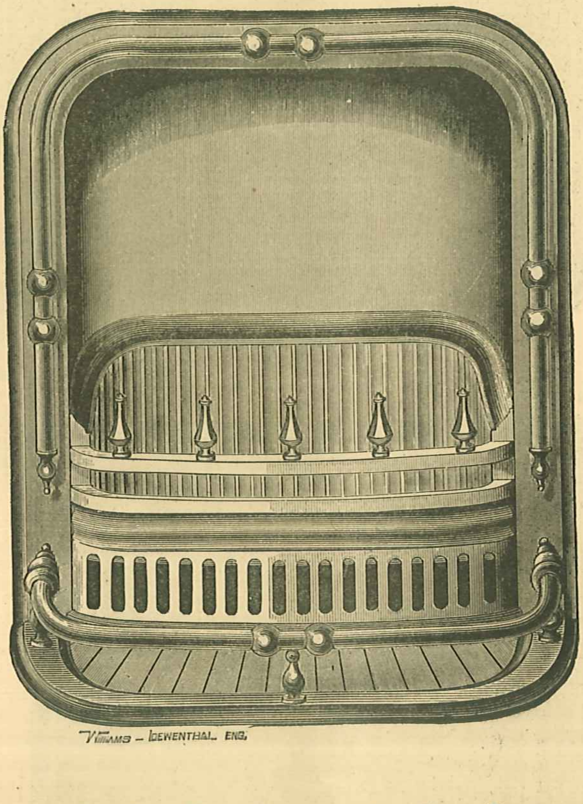
LAUNDRIES

Furnished with COPPER KETTLES, set in brickwork, for wood and coal, SOAPSTONE OR SLATE WASH TUBS, and all other appliances.

LOW DOWN AND ELEVATED GRATES.

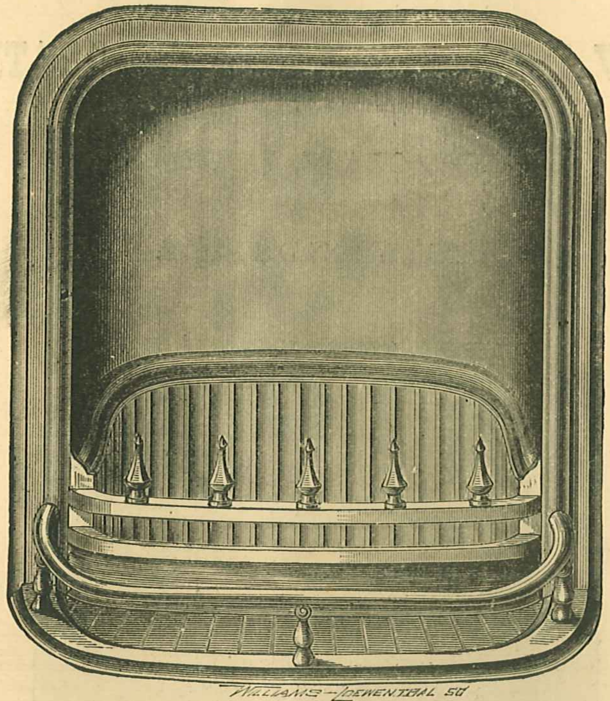
ELEVATED GRATE, FRENCH ARCH.

BALL BEAD FRONT.

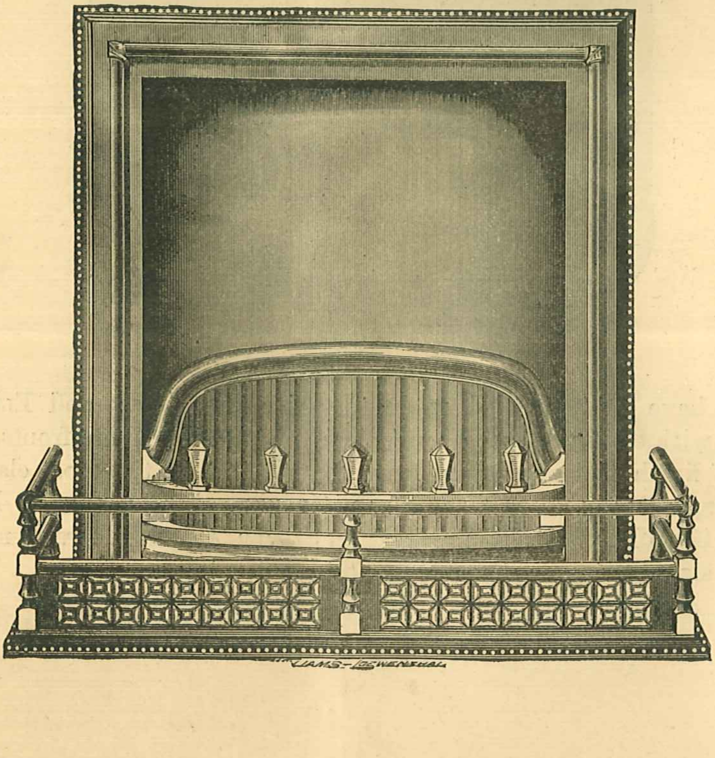

WILLIAMS – LOEWENTHAL ENG.

We have on hand and made to order Low Down and Elevated Grates, with either *Round*, *French Arch*, *Elliptic* or *Square* fronts, in all styles of finish and mounting, from the plainest to the most elaborate, comprising, Black Japanned, Dead Ground, All Polished, Nickel Plated, Gold Plated, Bronze, German Silver, &c., &c. Grates made to suit any size opening or shape in mantels or fireplaces.

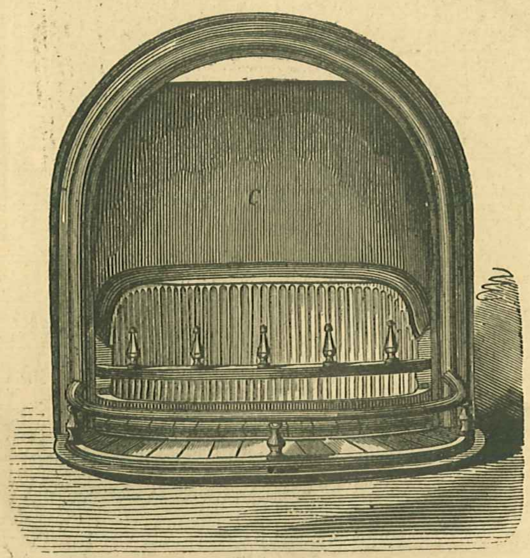
LOW GRATE, FRENCH ARCH FRONT.



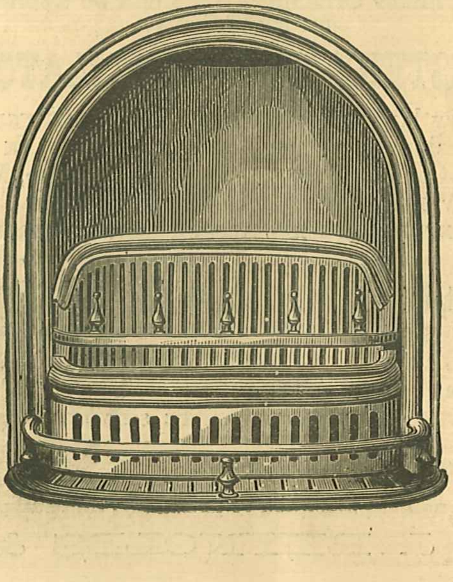
LOW GRATE, FANCY SQUARE FRONT.



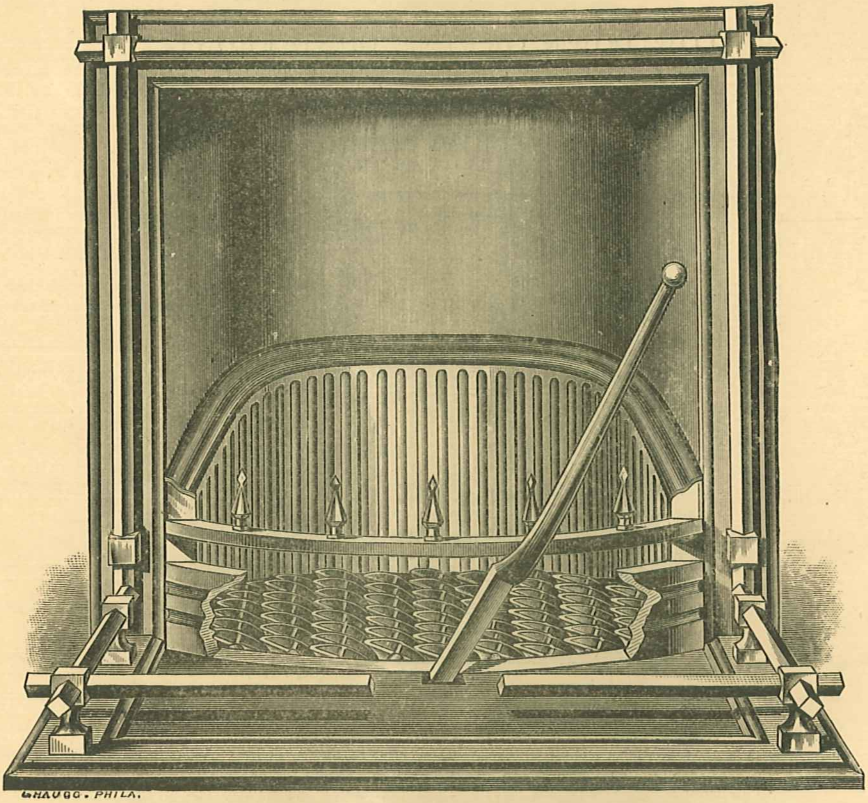
LOW DOWN GRATE, ROUND FRONT.



ELEVATED OR RAISED FIRE GRATE.



LOW DOWN GRATE WITH PATENTED SHAKING GRATE.


L.HAUGG. PHILA.

The Shaking and Clinker Crushing Grate can be applied to all sizes and styles of Grates,

REGISTERS AND VENTILATORS.

We have a very large assortment of Hot Air Registers and Ventilators, of neat designs and various sizes in Black Japanned, Gold Bronzed, Electro-Copper Bronzed, Nickel Plated, White Porcelain Enameled, Plain White Japanned, and other finish.

Also, Ornamented Pedestal Registers and Screens for Coils and Steam Pipes.

Conservatories, Greenhouses and Graperies Heated by Steam, Hot Air,

Or in any other Manner to Suit, and Guaranteed.

Fire Place Heaters and Sunnyside Fire Place Stoves, always on hand and put up in the best manner.

Enameled Slate Mantels of various sizes and styles, on hand and made to order.

Galvanized Circulating Boilers and Back Log Boilers.

Everything in our business attended to promptly, and satisfaction guaranteed.

J. REYNOLDS & SON.